

# ABSTRACT

A device for measuring the pressure of a gas mixture composed of gas components has an amperometric sensor that works on the limiting current principle, having two electrodes connected to a direct voltage that are situated on a solid electrolyte, of which one electrode is covered by a diffusion barrier, and a measuring element for measuring the limiting current flowing via electrodes as a measure for the gas pressure. For the purpose of error-free measurement of the gas pressure in a gas mixture in which the concentration of the gas components fluctuates with time, means are provided which fix the mole fraction of a gas component, drawn upon for pressure measurement, that is present upstream of the diffusion barrier at a constant 100%, at least during the pressure measuring phase. In one preferred exemplary embodiment, these means include a storage volume that is adjacent to the diffusion barrier which is separated from the gas mixture by a diffusion path, and two electrodes, situated on the solid electrolyte, for pumping of the gas component into the storage volume.